Space Weather Forecast

Issued on Monday, 15 November 2021 at 12:21 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of G1/Minor Storm on Day 3 (17 Nov).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity was Very Low, with no notable flares in the last 24 hours. There are two small and simple sunspot regions on the Earth-facing disc. One of these is in the southwest of the Sun's disc, and remains a simple mature and stable sunspot. The other rotated over the southeast limb just over 24 hours ago and is also mature and simple. There also appears to be a new region approaching the northeast limb. No Earth-directed Coronal Mass Ejections (CMEs) were observed.

Solar Wind / Geomagnetic Activity: The solar wind speed remains slow varying between 290-320 km/s. The Interplanetary Magnetic Field strength was weak, with the north-south component varying weakly. Geomagnetic activity remained Quiet (Kp 0-1).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be mostly Very Low, with a slight chance of Common-class flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Slow solar wind speeds on days 1 and 2 (15th and 16th) are forecast to become slightly elevated or elevated on day 3 (17th) due to the arrival of faster solar winds from a coronal hole. Geomagnetic activity is expected to be mostly Quiet, perhaps Unsettled at times, before increasing to Unsettled to Active on day 3 with a slight chance of G1/Minor Storm intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background levels with no solar radiation storms occurring.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	20	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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